

**CLAIMS:**

1. A method of assessing the infectivity status of a host infected with HIV,  
comprising:

5       measuring the number of cells in a sample which are expressing cell-surface gp120  
and the number of lymphocytes in said sample which are CD4 positive, whereby the  
infectivity status of the host is assessed.

10       2. A method of claim 1, wherein the infectivity status is represented by the  
number of cells expressing cell-surface gp120 per unit volume divided by the number of  
cells which are CD4 positive per unit volume.

15       3. A method of claim 1, wherein the measuring is accomplished by flow  
cytometry.

20       4. A method of claim 1, wherein the measuring is accomplished by a fluorescence  
resonance energy transfer assay.

25       5. A method of claim 1, wherein the cells are peripheral blood mononuclear cells.

      6. A method of claim 1, further comprising:  
      combining an effective amount of an anti-gp120 antibody attached to a first  
detectable label and an effective amount of an anti-CD4 antibody attached to a second  
detectable label under conditions effective for said antibodies to bind gp120 and CD4  
      respectively.

      7. A method of claim 6, wherein said measuring is accomplished by flow  
cytometry.

8. A method of claim 1, further comprising:

combining an effective amount of an anti-gp120 antibody attached to a detectable label, an effective amount of an antibody specific-for said detectable label, and an aqueous sample containing viral-infected cells displaying said gp120 to form a mixture, wherein said antibody specific-for said detectable label is attached to a magnetic particle;

incubating said mixture under conditions effective for binding of said anti-gp120 antibody to gp120 on said cells, and, for binding of said antibody specific-for said detectable label to said detectable label attached to said anti-gp120 antibody, to form a complex, wherein said anti-gp120 antibody is bound to said gp120 displayed on a viral-infected cell;

separating said complex by applying a magnetic field to said mixture, whereby said complex is retained by said magnetic field, and

determining the presence of magnetically-separated cells by detecting said detectable label, whereby said magnetically separated cells are lymphocytes expressing cell-surface gp120.

9. A method of claim 1, wherein the CD4 count of said host is less than  $200/\text{mm}^3$  of whole blood.

10. A method of claim 1, wherein the host has been treated with HAART.

11. A method of determining the infectivity status of a host infected with HIV virus who has tested negative in a virus co-culture assay, comprising:

measuring the fraction of lymphocytes expressing cell-surface gp120 and the fraction of lymphocytes which are CD4 positive, whereby the infectivity status of the host is assessed.

12. A method of claim 11, wherein the measuring is accomplished by flow cytometry.

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13. A method of claim 11, wherein the measuring is accomplished by a  
5 fluorescence resonance energy transfer assay.

14. A method of claim 11, wherein the cells are peripheral blood mononuclear cells.

10 15. A method of claim 11, further comprising:  
combining an effective amount of an anti-gp120 antibody attached to a first detectable label and an effective amount of an anti-CD4 antibody attached to a second detectable label under conditions effective for said antibodies to bind gp120 and CD4 respectively.

16. A method of claim 15, wherein said measuring is accomplished by flow cytometry.